

THE VARIETIES OF IMPETIGO

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THE VARIETIES OF IMPETIGO.

This thesis is founded upon observations made in France; in a Hospital where some 300 beds were constantly occupied by patients with affections of the skin. All were soldiers, and for the most part the diseases encountered were of a contagious nature such as impetigo, scabies and the like, the result of close contact and imperfect personal cleanliness: nevertheless, although labelled with names familiar to civil life, their path has been very perverse and irregular, they have responded ill to tried remedies and have arranged themselves into groups not usually met with in Hospital practice.

The material for these notes has been gathered together irregularly and with difficulty. Military exigencies must of necessity often interrupt a series of observations; patients must often be evacuated before their disease has completed its course; or when apparently cured disappear, stepping forward into the unknown future of the fighting army.

As is well known the disease now called impetigo contagiosa was clearly described in 1863 by Tilbury Fox (1) who recognised its contagious nature and distinguished it from the staphylococcal perifolliculitis of Brockhart; to Crocker (2) belongs the credit of having first observed streptococci in the fluid of unruptured

vesicles in 1881; the true significance of this latter discovery was not appreciated until 1900 (3) when Sabouraud's masterly work appeared. He showed that impetigo was invariably a streptococcal condition, and the staphylococcus aureus only an epiphenomenon, the result of secondary infection. The group impetigo also embraces ecthyma, which is only a dermic impetigo. A streptococcus may attack the epidermis producing vesicles or bullae, in which phase the disease may remain; from rupture of these vesicles a secondary staphylococcal infection, the typical 'stuck on' crust is produced; but under certain circumstances, the dermis may become involved, producing a shallow ulcer with a dense dark coloured crust: to this latter condition the name ecthyma is attached.

In the past, before these facts were known, much confusion existed; the classification of Willan and Bateman included five varieties which have been interpreted by Sabouraud as follows:-

- (a) Impetigo figurata: true impetigo contagiosa.
- (b) Impetigo sparsa; impetigo of Brockhart.
- (c) Impetigo erysipelatodes: a condition difficult to place now; the description is not very clear. Possibly it was "eczema rubrum."
- (d) Impetigo scabida, probably patchy eczema which had become impetiginised.
- (e) Impetigo rodens: ulcerated lupus vulgaris, secondarily impetiginised.

In the above it can be observed how readily impetiginisation was confused with impetigo, and the importance of this is not perhaps always sufficiently appreciated. Sabouraud⁽⁴⁾ has defined impetiginisation as "the characteristic symptoms of impetigo, when they are superadded, not by isolated points alone, but diffusely, on a pre-existing dermatosis, having, without the

impetiginisation, and beneath it, its proper symptoms and individual existence."

In the army, at least under the existing war conditions, secondary impetiginisation has assumed an unusual importance, as the underlying condition may pass unrecognised.

At first sight, these various impetigos seem to be confused and without characteristic features. On analysis, however, it becomes apparent that each selects certain areas of the body by preference, and that there are to be found elsewhere indications of the underlying disease: six separate classes can be distinguished.

No.1 Type associated with seborrhoea.

No.2 Type associated with scabies.

No.3 Common "primary" impetigo.

No.4 Linear impetigo.

No.5 Ecthyma.

No.6 Impetigo en masque.

TYPE I. SEBORRHOEA VARIETY.

The hairy scalp, eyebrows, beard and whisker regions - i.e. the hairy regions of the head - are selected by preference for impetiginisation. In addition, it is usually possible to find here and there 'dry' seborrhoea, usually of slight degree, especially in the flexures of the knees, elbows, and neck, and in the presternal and interscapular regions. The appended five cases are given as examples.

CASE I.

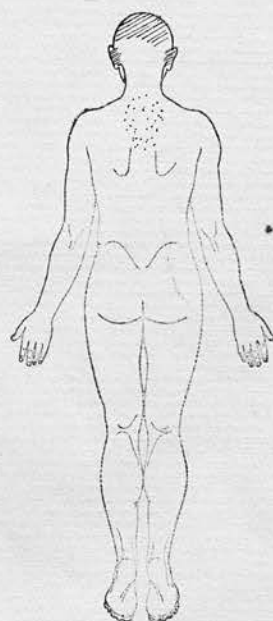
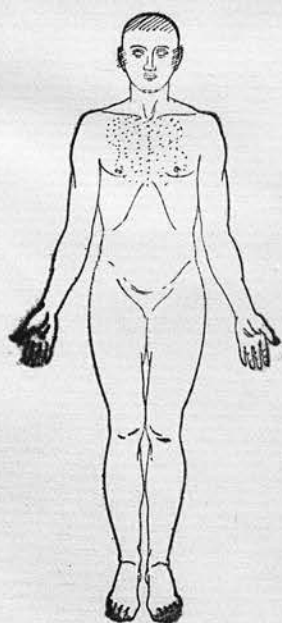
When first seen there were thick, dry, lozenge-shaped crusts over the scalp, covering an oozing surface: these had been present for one week, but seborrhoeic lesions had been

observed by the patient on his chest 3 weeks previously. A typical impetigo covered the ears and the neighbouring skin.

Cultures (from the head) gave staphylococcus albus and a short chain streptococci (6 to 8 cocci).

Diagrams showing the characteristic distribution, and a photograph are appended. The seborrhoea over the presternal region is well marked and gives the key to the diagnosis. The head, and especially the ears, have the appearance of an impetigo.

Case 1



CASE 2.

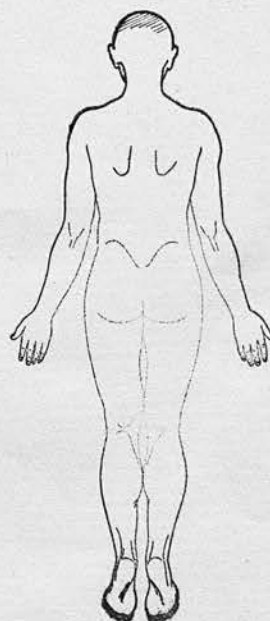
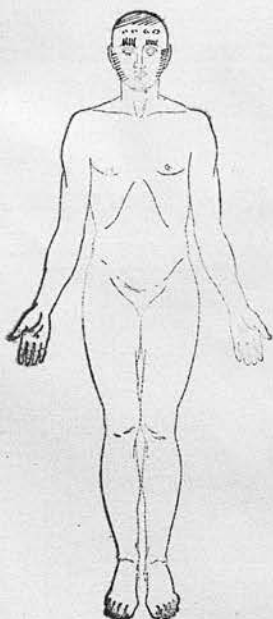
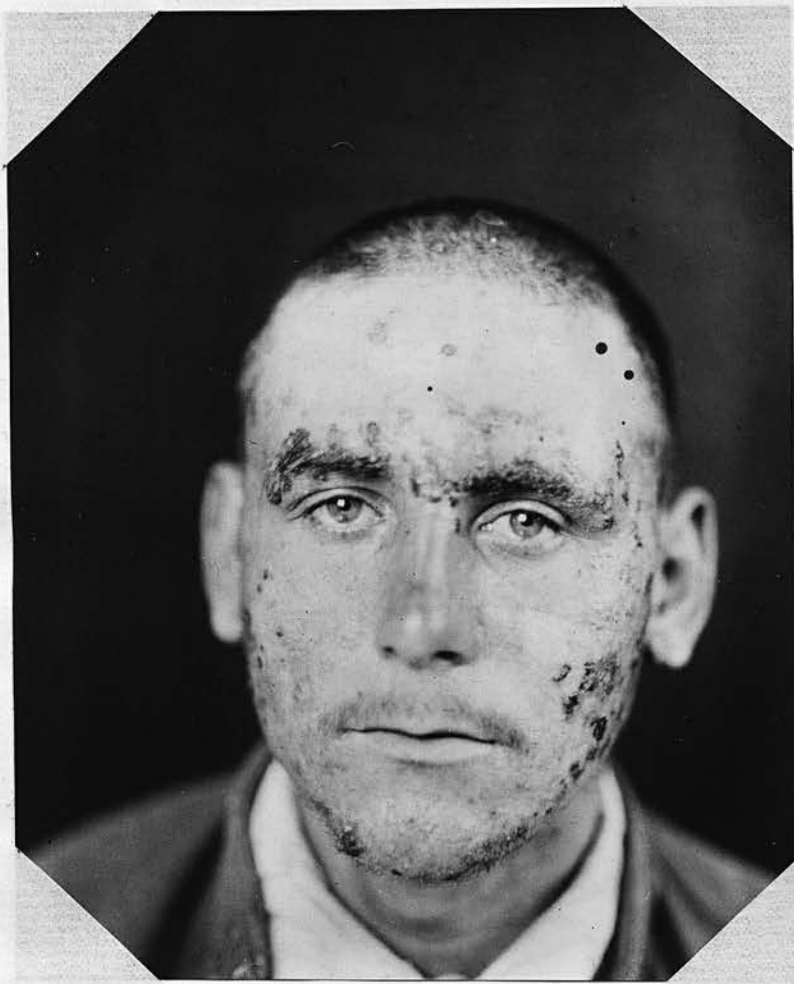
"Seborrhoeic eczema" (impetiginised) of the head: 14 days duration. The crusting of the scalp was much more flaky than in Case I, but the same underlying oozing surface could be observed. On the forehead, characteristic vesicles of early impetigo existed. There were "stuck on" impetiginous crust on the eyebrows, cheeks and chin.

Cultures (from a vesicle) gave a growth of staphylococcus and short chain streptococci.

Here then there was "seborrhoeic eczema" of the scalp and hairy regions of the face, which had become impetiginised. Secondary to this a true (primary) impetigo had been implanted on the forehead by inoculation.

Diagrams of the distribution and a photo of this case are given.

Case 2



CASE 3.

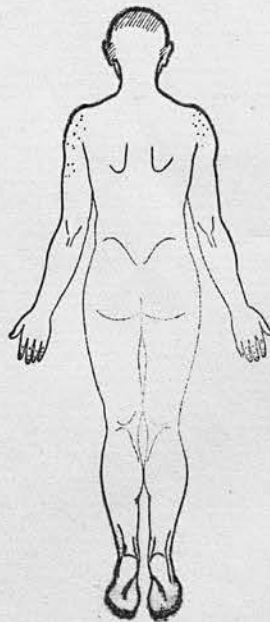
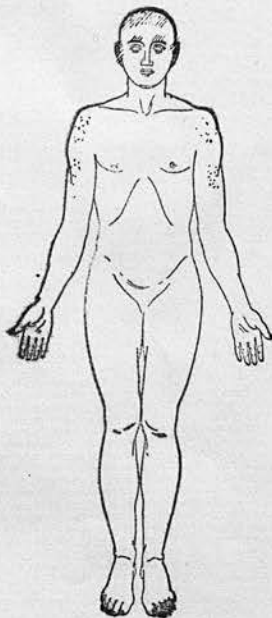
This was also an impetigo (vesicular and crusted) of the eyebrows and ears, and some 'dry' seborrhoea on the upper arms.

From a vesicle about the ear streptococci in short chains were cultivated.

In this case, the disease appears to have begun on the head as an impetiginised seborrhoea; the affection of the ears and eyebrows followed.

A photo and diagrams are given.

Case 3



CASE 4.

This patient gives a history of a scaly condition of the scalp "for years", coming and going.

On admission to Hospital the head was observed to be thickly covered with crusts under which pus was found. There were also impetiginous lesions on the eyebrows, "whisker" regions, chin and neck - and a single "crust" on the right ankle: this last no doubt inoculated by a contaminated finger.

The bacteriological examination of the pus was interesting. There were streptococci (in chains of about 10 or 12 cocci), staphylococci, and also a diphtheroid organisation showing involution forms closely resembling that of the Klebs-Loeffler type. It differed in its sugar re-actions, fermenting saccharose readily.

A photo and diagram of this case are shown.

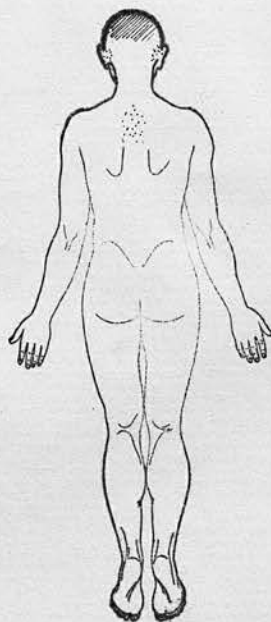
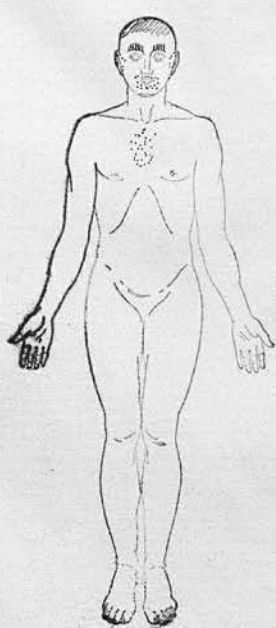
Case 4



CASE 5.

The hairy scalp was thick covered with laminated scales; there was also an impetigo (crusted) of the eyebrows. The condition on the scalp was observed 6 weeks before admission. Behind the ears and on the chin there was a furfuraceous condition corresponding in type to the streptococcal impetigo pityroides of children. There was also a little dry seborrhoea over the presternal and interscapular regions.

A photograph for this case is shown.



OBSERVATIONS.

It may be assumed that in this type, seborrhoea of slight degree had been in existence for a longer or shorter period, often overlooked by the patient, especially when limited to a "scurfy" condition of the scalp. The subsequent course is by no means simple. This seborrhoea for some reason becomes eczematized, the skin becoming red and covered with vesicles: and then, infected by streptococci, impetiginized. This latter phase is represented by confluent weeping sheets, rapidly crusting. It is difficult to say whether the eczematization invariably occurs, or if in certain cases, impetiginization may be directly implanted upon a dry form of seborrhoea.

In either case common impetigo may spread to the ears, face and extremities, onto skin that is apparently healthy, where there is no pre-existing seborrhoea, or another individual may contract it. That is to say, the impetigo part of the disease behaves exactly as the well known impetigo contagiosa of the hospital out-patient department.

The treatment of this type depends upon an understanding of its complex nature. Remedies suitable for the "impetigo" are unsuitable for the "eczema"; and further, when both these are displaced, the underlying seborrhoea must be attacked.

These seborrhoeic conditions of the scalp appear to be specially suitable for streptococcal growth: perhaps dermatologists have too often overlooked the "soil" in various infective conditions of the skin. Yet it is well known that the common ringworm fungus refuses to grow in the hair of the head after puberty. Bacteriological investigations have revealed

micro-organisms other than streptococci, such as staphylococci and a diphtheroid bacillus, but the general course of the disease, and examination of the earliest lesions suggest that these were secondary or accidental.

THE DIAGNOSIS is made by observing (1) the distribution of the "impetigo" (hairy regions) and (2) the discovery of small patches of seborrhoea elsewhere.

Other impetigos of the scalp exist, but they are often associated with pediculosis capitis, or are inoculations from simple (primary) impetigo elsewhere. These differ in that they form discrete lesions on the head, whereas in the seborrhoeic type large areas are involved, often the whole scalp.

TREATMENT.

This is naturally divided into four stages.

- (a) Removal of crusts: a boric compress applied from 12 to 24 hours will effectually do this. Boric starch poultices are not so satisfactory.
- (b) Cure of the eczematization. It is generally necessary, and always desirable, to shave the head: where the scalp is too tender to permit of this, close clipping should be resorted to.
- (c) Cure of the impetigo. This is best done by one per cent ammoniated mercury in zinc ointment; Lassar's paste can be used.
- (d) The last stage, the removal of the seborrhoea, is the most difficult. Lassar's paste acts well as a rule, later stronger remedies, such as 2% each of sulphur and resorcin in lanolin or zinc.

Unfortunately relapse is frequent and disappointing. Patients discharged from Hospital cured often return again in a few weeks with an advanced degree of the disease. This is often due to tiny fissures behind the ears, chronic streptococcal infections which are hard to cure. They should be painted daily with 3% Silver Nitrate Solution.

2. TYPE ASSOCIATED WITH SCABIES.

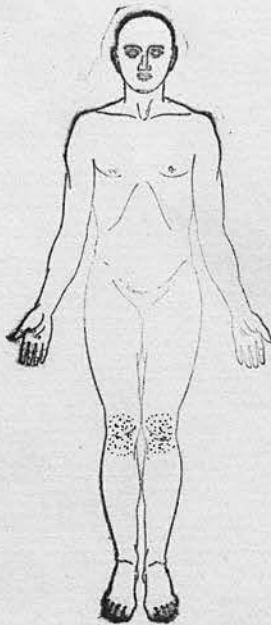
It has long been recognised that a special form of impetigo occurs in connection with scabies - impetigo galeux of French authors - the interdigitis, axillae, wrists and penis being involved. This is a secondary coccal infection selecting the predominant lesions caused by the burrowing acarus. The type to be described does not correspond to this, nor is it in any way related to the impetigo scabida already referred to. It selects points of pressure, viz:- the buttocks, elbows and knees. Typical examples are related below.

CASE 6.

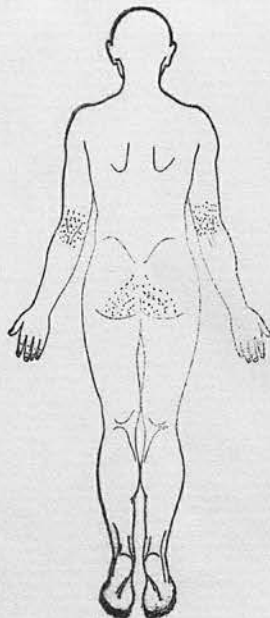
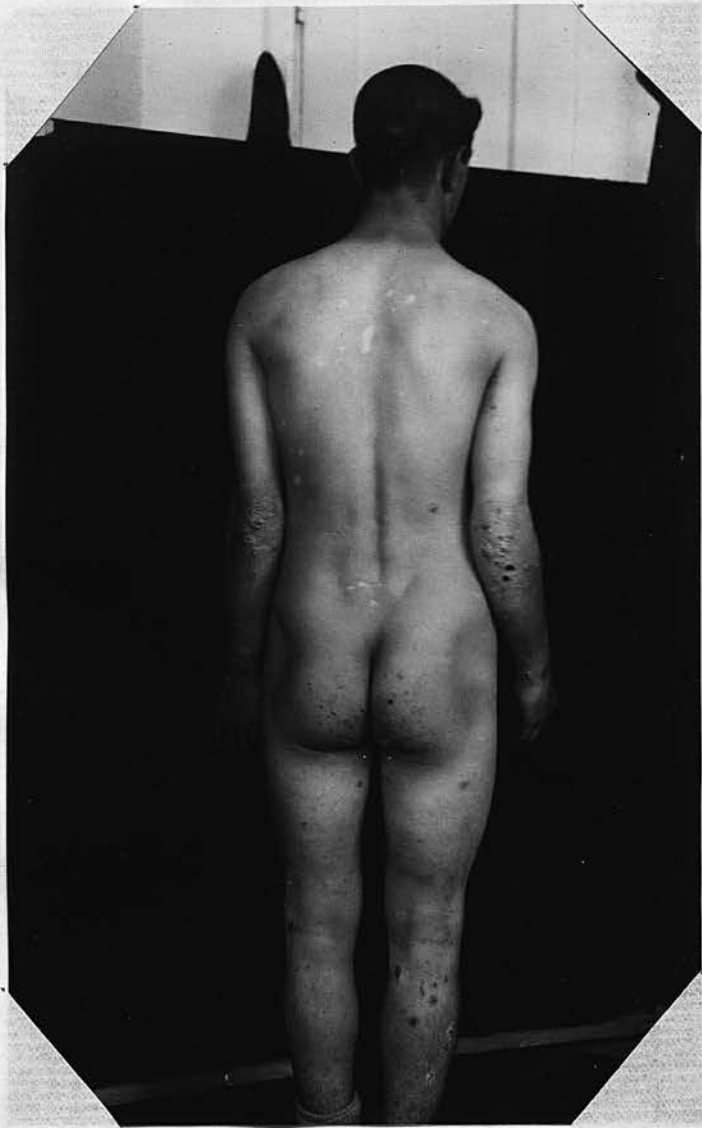
History. Scabies diagnosed 6 weeks and impetigo of the elbows, buttocks and knees, 5 weeks before admission.

Bacteriology. Staphylococcus aureus, albus, and a short chain streptococci.

Case 6 (front view)



Case 6 (back view)

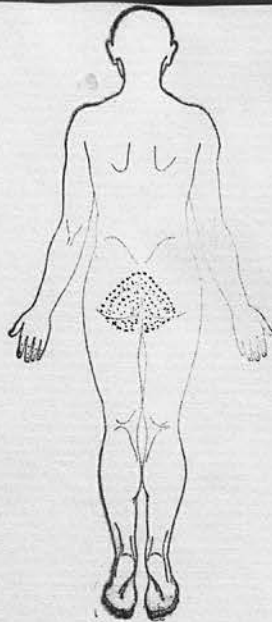
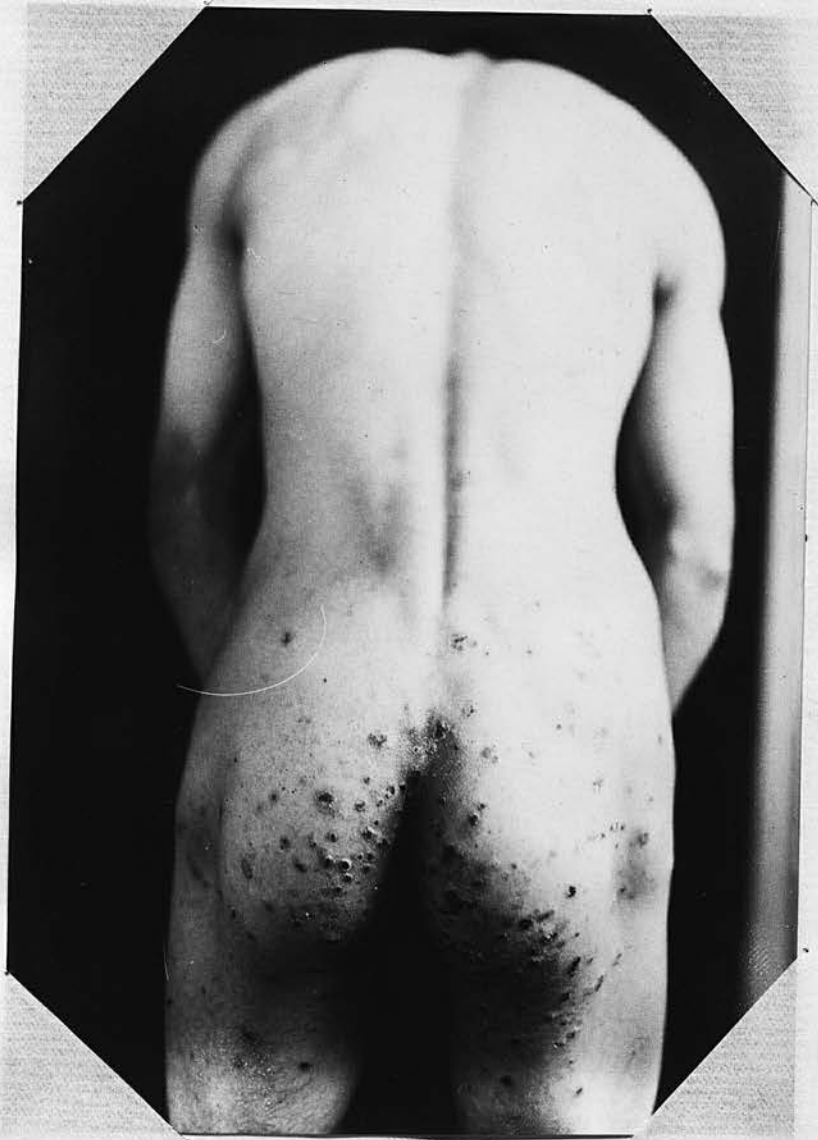


CASE 7.

Began 1 month prior to admission to Hospital with "itching all over."

On the buttocks, an extensive impetigo: also slightly on the face. Lesions of scabies (untreated) were found between the fingers and on the penis.

Case 7



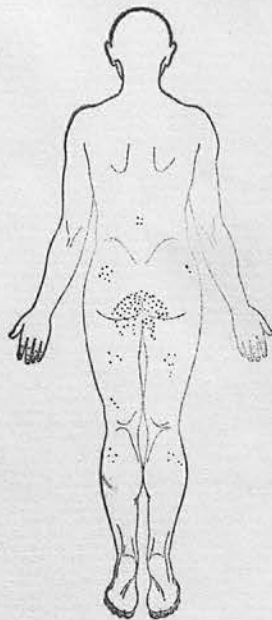
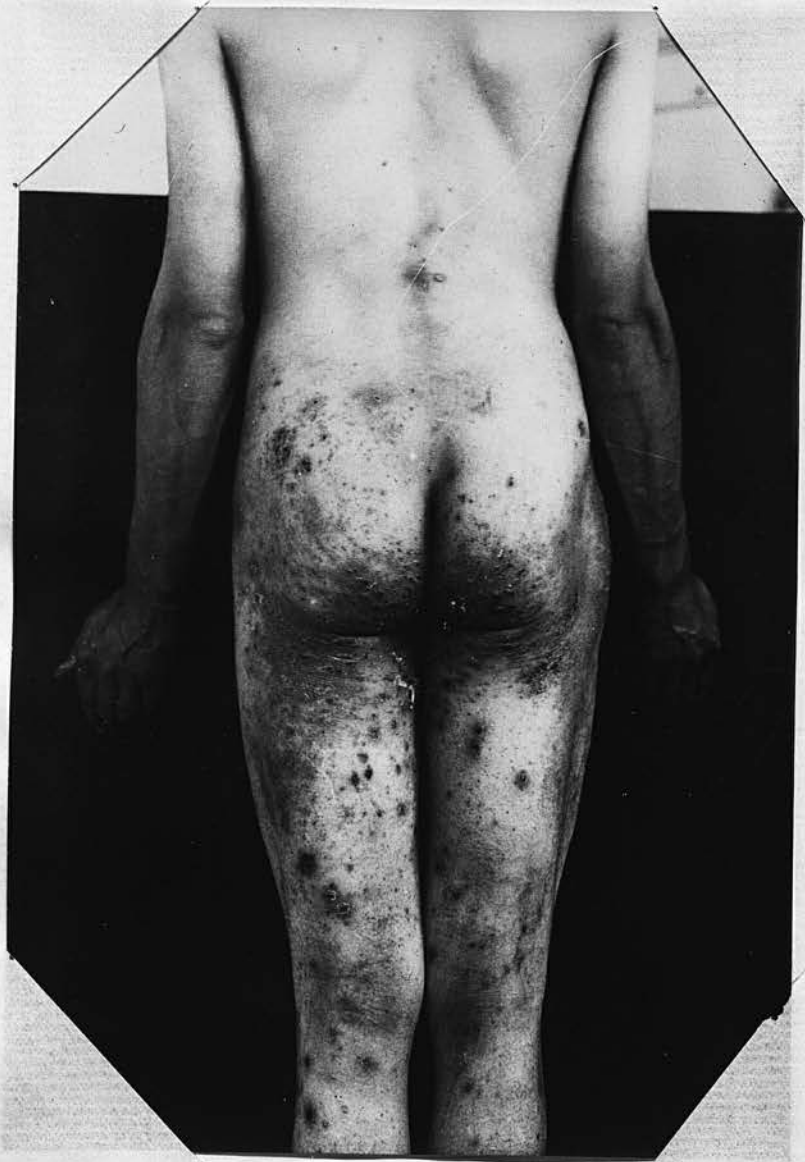
CASE 8.

There was some impetigo of buttocks, extending on to the thighs. In the latter situation, vesicular lesions could be discovered.

Scabies was also present.

Bacteriology. Streptococci in pure culture were obtained.

Case 8



OBSERVATIONS.

The importance of this type lies in its relations to scabies. This association is frequently overlooked, and in consequence the disease recurs again and again: at the same time the infected individual is transmitting scabies to others.

The lesions of scabies are not always easy to find and must be diligently sought for between the fingers and on the penis. In the former situation it is rare to discover burrows; vesicles are much more common.

So far as can be ascertained, in every case of impetigo affecting the buttocks, elbows and knees, scabies is present. Since the distribution is so characteristic, there should be no difficulty in recognising this type. If the crusts are removed from the lesions it will be seen that the impetigo is deeper than would be expected, involving the dermis: subsequent scarring is therefore usual, and these scars, telling of frequent relapse, can often be seen in numbers on the elbows and knees.

As might be expected, impetigo is also found elsewhere; this presents no unusual features. The association of lymphangitis of the upper arm - especially the right - or adenitis of the groin is not common. Further, both these complications should suggest to the observer the possibility of scabies.

TREATMENT.

Recognising the underlying cause, every case must be treated with sulphur ointment, applied twice daily for 3 days. It might be thought that this proceeding would be harmful to the impetigo: such is not the case. Subsequently 1% ammoniated

mercury in zinc ointment is used; the worst areas are first treated with 1 in 2000 perchloride solution. It is scarcely necessary to add that all crusts should be removed and that clothes and bedding should be disinfected after the sulphur treatment.

TYPE 3. COMMON IMPETIGO.

This disease is so often met with in civil practice that little need be said of it here. As is well known, it especially affects the exposed parts, such as the hands and face. It is not common at Base Hospitals, probably because it is cured by the Regimental Medical Officers. It may be found in association with the other types. It is easily cured.

TYPE 4. LINNEAR IMPETIGO.

This type appears to be a product of the war. The lesions bear a certain resemblance to the artefacta; nevertheless, although relatively common, in no instance has it been possible to discover that any chemical or other substance was used in its production. Further, it nearly always is found on the lower extremities and follows a characteristic course. The earliest lesion consists of an oval area dotted with tiny discrete blood crusts (see photo of earliest lesion). This is converted into a shallow narrow ulcer covered by a dirty black scab. These lesions are grouped in parallel lines; sometimes one or two may be placed at right angles to the others.

CASE 9.

The patient was a young man, apparently in good health. As is shown in the photograph, the legs were covered with parallel ecthymatous lesions and pigmented areas marking the places where these had healed. This was the third attack, the others having occurred 8 months and 5 months previously. The palate and fauces were very insensitive, a characteristic feature of this condition.

The four cases depicted in the next photograph show other examples of this condition. A short account of each is given

Photograph showing the earliest lesions
of Linear Impetigo





CASE 10. Duration 14 days: third attack (first 6 months previously).
Between attacks lesions healed completely.

CASE 11. Duration 1 month. No previous attack: is "nervous."

CASE 12. Duration 1 month. No previous attack.

CASE 13. Duration 3 weeks. A similar condition 2 years ago.
Speaks with a stutter.

OBSERVATIONS.

It may be argued that this is an example of the condition known as the dermatitis artefacta, and the associated insensitive condition of the palate is in favour of this view. On the other hand, the lesions are not regular enough, they certainly are not caused by chemical substances. They follow a definite course and are usually confined to the lower extremities. As itching is complained of, the lesions may be produced in an attempt to relieve this. The cause is not clear: pediculosis is certainly present, but this condition is almost universal. Further, the scratch marks of pediculosis are found over the shoulders.

It would appear that there is underlying neurosis; the tendency towards recurrence is in favour of this.

Cases 10,11,12,13.



TYPE 5. ECTHYMA.

This is an old name. It is now rarely employed, but connotes an impetigo which involves the dermis.

This condition was found in a large proportion of cases: it occurred most frequently on the lower extremities, sometimes on other parts of the body. There were thick black crusts, longitudinal and circular, covering an ulcer some 2 or 3 millimeters deep; when the crust was removed, pus could be seen filling the excavation.

The depth of these lesions, and their situation on dependent parts render healing slow. The scarring was sometimes considerable and bizarre^s, curious papillated bases, raised sharp borders, projecting loose tags, or even keloids resulting.

The next case (14) is an example of this condition where the disease was of moderate degree.

CASE 14.

The patient stated that about 20 days before admission he noted red areas on his legs with loose skin (i.e. ruptured bullae). As he was obliged to wear ^{wet} both puttees continuously, the disease got gradually worse.

The photograph shows three of these ecthymatous lesions and numerous scratch marks.

Bacteriology. Streptococci and staphylococci aureus were obtained from the pus.



OBSERVATIONS.

No essential difference exists in the pathology of ecthyma and impetigo: indeed both are often found together and the one is simply a deeper degree of the other, and the initial lesion in both is a vesicle. It has been stated that they occur in debilitated subjects, but this has not been borne out in these observations.

THE TREATMENT is simple: all crusts should be lightly removed with a sharp spoon, the cavity cleared of pus, and then pure carbolic applied. Thereafter, washing the affected area with weak perchloride lotion and applying diluted ammoniated mercury ointment brings about cure. Nevertheless, complete recovery does not result quickly.

TYPE 6. IMPETIGO EN MASQUE.

This form is included as it is ~~not~~ common and is frequently wrongly diagnosed. The condition begins on the cheeks as tiny discrete vesicles which quickly rupture and become covered with little amber points. Soon, from streptococcal infection, a crusted surface is produced extending over both cheeks. The eyelids and upper lip invariably escape. (Sabouraud). The course of the disease is that of an eczema, with periods of improvement, relapses, &c.; for this reason it is frequently thought to be an unusually chronic impetigo.

If treated vigorously by antiseptics, then the disease becomes aggravated and tends to spread more rapidly, sometimes wandering round the neck and on to the forehead. No applications other than the mildest should be used. Boric calamin lotion or bland dusting powders are of value.

SUMMARY.

In dermatology, as in other branches of medicine, the war has evolved new clinical types: since it is possible to separate these types into definite groups, it is evident that they breed true. That they are complex will be seen from the above accounts. To diagnose a condition as impetigo is not sufficient - search must be made for the underlying cause. There arrives an enlarged suppurating inguinal gland: but the streptococci have gained entrance through a lesion on the buttock; this again has resulted from scabies. So the clue to a bubo is found between the fingers. Here then is a species of syllogism - not the disorderly work of some spiteful pathologic force - regular and methodical, capable of disentanglement by observation. So also with other types. The head is seborrhoeic, becomes eczematized, and is then fruitful ground for streptococcal growth. But this is not impetigo.

And yet, all are united by the common link of impetiginisation, the proof of which lies in the discovery of a simple impetigo on some part of the body remote from the main diseased area.

It is impossible to say whether this streptococcus is the ~~usual~~ usual type met with in civil practice. Certainly it is more difficult to kill; it clings tenaciously in little fissures behind the ears, about the nose and mouth, awaiting a favourable opportunity for development. It is far more destructive in its action, often reaching the dermis, and leaving scars and even keloids.

If any conclusion be attempted, then it is that in impetigo

an alert watch should be kept. If this be done, in a large proportion of diagnoses of impetiginisation not impetigo, will be made.

REFERENCES.

1. Colcott Fox: Allbutt's System of Med: Vol.IX. p.165.
2. Crocker. Diseases of the Skin: 3rd Edition. p. 247.
3. Sabourauds Ann.de.derm. 1900 (quoted in La Pratique Dermatologique, Vol. 2, p. 877.
4. Sabouraud: La Pratique Dermatologique, Vol. 2, P. 886.